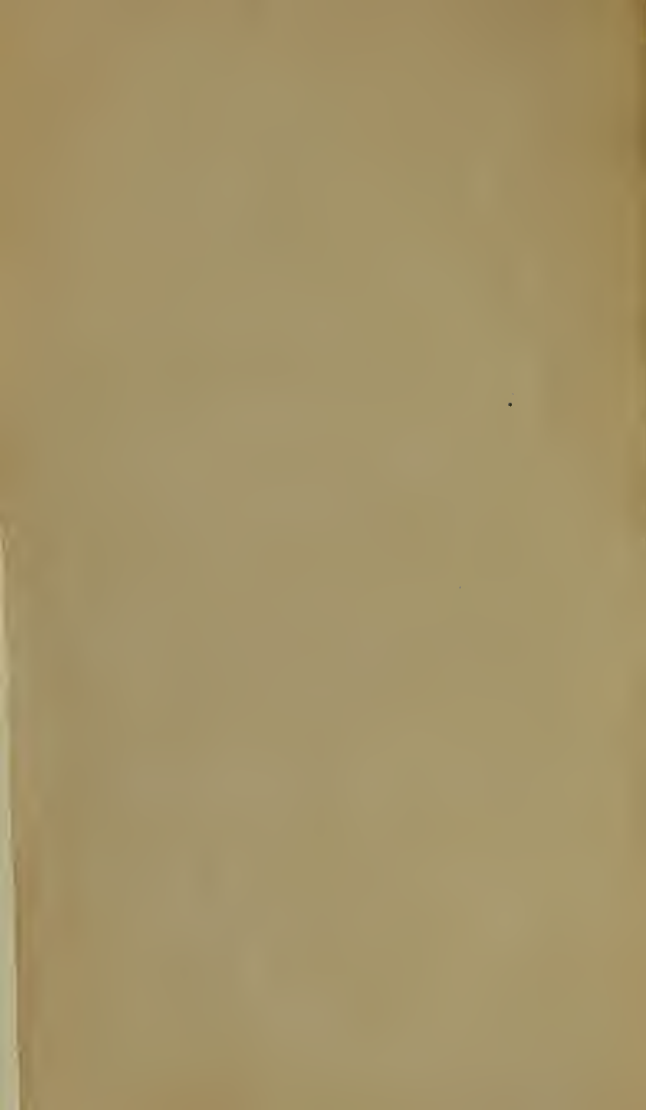


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1838

PETER. THOUGHTS ON MEDICAL
EDUCATION IN AMERICA.



Presented by the Author 69

THOUGHTS

ON

MEDICAL EDUCATION IN AMERICA.

AN INTRODUCTORY LECTURE,

DELIVERED IN

THE CHAPEL OF MORRISON COLLEGE,

TO THE

MEDICAL STUDENTS

OF

Transylvania University,

On the 11th November, 1838.

BY ROBERT PETER, M. D.,

*Professor of Chemistry and Pharmacy, in the Medical
Department of Transylvania University.*

Published at the request of the Medical Class.

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LEXINGTON, Nov. 13, 1838.

Professor ROBERT PETER,

SIR:—In compliance with the wish of the Medical Class, the undersigned, its committee, appointed for the purpose, have the honor to request a copy of your very eloquent Introductory Address for publication, whose just encomium is the well-merited applause of the Ladies and Gentlemen of Lexington and the Students of Medicine, before whom it was delivered, and whose perusal will be a treat not only to the literary and scientific, but a source of instruction to the young.

We have the honor to be your most obedient servants,

B. P. HUNTER,
WM. M. FINLEY, } *Committee.*
S. F. CULBERTSON,

MEDICAL LABORATORY, Lex., Nov. 15, 1838.

GENTLEMEN,

In accordance with the wishes of the Medical Class, as expressed in your very polite note, I herewith transmit to you, to place at their disposal, a copy of my Introductory Lecture, which I could wish had been worthy of the flattering terms in which you have mentioned it.

Your most ob't. serv't.

ROB'T. PETER.

To Messrs. HUNTER,
CULBERTSON and } *Committee.*
FINLEY,

INTRODUCTORY LECTURE.

ON casting our eyes over the extended country, rich in all its variety of beauty and of wealth, which we are proud to call our home, many objects that are strikingly pleasing and instructive, crowd on our perception.

The retrospect shows a vast wilderness of forest, through which the mighty cataract is only to be distinguished by its ceaseless roar or its enduring fog,—and amid which, the green sea of the western prairie is to be seen changing the character of the grand monotony of the leafy surface. The rivers sweep by in sullen majesty; undisturbed, save by the plunge of the wild fowl or the light bark of the savage,—and the limpid waves of the forest-bound lakes, untrammelled by the arts of civilized men, and uncharged by the burthens of commerce, bathe in their play an untrodden belt of beach, or urged by the fury of the storm, drive foaming in their might through the primeval woods.

Anon the white man comes to dispossess the savage of his hunting grounds; and after him appear, in quick succession, all the arts which elevate society and soften and improve the condition of humanity.

By the superior knowledge and persevering industry of civilized man, the forest bows beneath the axe, and the rustling leaves of corn and waving fields of grain greet the newly admitted light on the virgin soul. The log-hut heralds the approach of improvement;—but in a short time this gives place to the spacious brick tenement;—towns rise where lately the savage whooped over his slain game;—wide roads obliterate the track of the moccasin, and spacious bridges replace the raft of logs or the birch canoe. The river hills resound with the loud puff of steam;—the

startled water bird rises at the swell of the passing steam-boat;—while across the land the rapid steam-car shoots like a meteor, along its iron rail-way. The waves of civilization and improvement breaking on the east, swell rapidly over the country, and in a short time, almost like the shifting of a stage scene, its face is changed, from a spectacle of wildly picturesque and primitive beauty, to one in which proofs of enlightened and united industry crowd the field of view.

This change has been so rapid that even some of the old among us have seen its several phases. Unlike its slow and labored progress in other countries, improvement, with us, has burst like a flood over the land, and civilization, unconscious of a state of infancy, sprung at once into vigorous youth. The generation of pioneers who subdued the forest and its wild inhabitants, have not yet passed away; the ear which was sharpened by the silence of the forest, is deadened by the unaccustomed din of labour;—the lungs which inhaled the pure breath of the mountain, are polluted by the dust and smoke of cities; and the form that expanded in the wide solitude of the distant clearing, is cramped and jostled by the busy crowd of active men.

As the face of the country has changed so have the habits of the people; and in like manner our duties and responsibilities vary with the changing aspect of society. The hardy pioneer, cast almost on his own resources, amid a stubborn forest to be subdued and a subtle foe to be avoided and repelled,—dependent on his own laborious exertions for his daily food and safety,—was indebted to his strong hand, his swift foot, or his keen eye for his subsistence and preservation; his wants were bounded by his limited means of supply, his aspirations contracted by his stern necessities and his responsibilities limited to the narrow circle of his own household. Society claimed nothing from him, for society could extend to him none of its protection nor of its indulgencies. But, with the gradual accumulation around him of the elements of society, came new duties and new immunities. Pursuits became more varied as the community increased in density and occupations, and

the various useful arts, becoming more isolated and exclusive, became also more thorough and finished. Society while it stripped the solitary man of half his powers, relieved him of half his labors and responsibilities, and by confining him within the narrow sphere of one occupation made him feel that he was but a single element of the great social compound.

This division of labor and responsibility, and, as a natural consequence, perfection of execution in the narrow sphere of exertion, keep pace with the advancing improvement and the enlargement of society. The man, who as a pioneer, was alike the undisputed lord of the domain and the only slave to his own wants and necessities;—the hunter, farmer, laborer and artizan of his own family,—contracts, more and more the sphere of his exertions, as his fellow-men cluster around him,—and the Caleb Quotem of the rising village becomes the more exclusive artizan of the town, and the still more confined, yet more finished workman of the populous city.

In like manner, also, has the character of the study and practice of Medicine changed with the rapid improvement of the country and of society. The Doctor of the new and thinly populated settlement; moulded by the force of surrounding circumstances, partook of the character of the hardy community to which he ministered. Activity, boldness and promptitude on his part, in the administration of the means which were in his power to apply, compensated, with the hardy settler, for his want of the refinements of education and the fulness of knowledge which a more perfect state of society would require in a physician. Like the laborious, active and much enduring freemen, who were his patients when sick, and his fellow hunters or laborers when in health, necessity had circumscribed his means of acquiring knowledge, and, while it extended the field of his labors, had lowered the standard of perfection in every part of it.

The generation of worthy and laborious practitioners of medicine in the west, who are just passing away, have felt the full force of those adverse circumstances. Curtailed

in the means of the acquisition of knowledge, by the scarcity of books; the great distance of the scites of medical instruction; the paucity of teachers; the long professional rides, and the necessity for active bodily exertion, in the new country; they were obliged in many cases, to make bold experiment supply the place of ascertained knowledge, personal experience replace the accumulated lore of ages, and ingenious expedient, or indigenous substitutes serve instead of the finished armory of their more highly favored brethren in the densely populated region. But those who are now just entering the ranks of the profession, or who are bracing and preparing themselves for the glorious contest with disease, begin their labors under much more favorable auspices. No want of books, or scarcity of teachers, or of the means of instruction, cramp their aspirations after knowledge, or contract the limits of their usefulness. Medical books are now attainable in the smallest hamlet, and are even sent throughout the country, by means of the post-office, in periodical publications. Medical Journals, which give the intelligence and the new discoveries of the older continent, as well as of our own, are daily increasing in number and importance; while Schools of Medicine, which vie with each other in the perfection of their means of instruction, have sprung up throughout the country, in numbers fully adequate to supply the greatest probable want of the community.

Compared with the facilities afforded to their predecessors in the study of medicine, in the United States, the Students of the present day are peculiarly favored. The medical history of our country presents this fact in a most striking manner.

Not a very long time has elapsed, not more than a lifetime; since not a single Medical College existed in our wide country. This history tells us that, before the revolution, educated physicians, who devoted themselves exclusively to their profession, were exceedingly rare. It was a very common thing to see the clergyman, the doctor, the husbandman and the artizan united in one person. Clergymen, we are informed, considered it their duty to

qualify themselves to attend to the health of the bodies as well as of the souls of their flocks; and they not only practised medicine, but wrote treatises on medical subjects and entered into medical controversies.

Until about seventy years ago, all the graduated physicians, who practised on our continent, had received their collegiate honors abroad. In 1768, the Degree of Bachelor of Medicine was conferred on only ten candidates, by the then just commencing Medical School of the College of Philadelphia, and the whole number of graduates in medicine, in the Philadelphia College and the University of Pennsylvania, for the succeeding thirty years, was only one hundred and sixty-one;—a number not much greater than that of the graduates of a single year in the old school of Philadelphia, at the present day. This was a meagre average for the thirty years, of less than six graduates a year, and many of these were only Bachelors of Medicine. It is to be stated, however that the number of medical students in this old and venerable institution, during that period bore a much greater proportion to the number of graduates than it does at present, in consequence of the greater difficulties, at that time, attending the prolonged study of the profession and the great necessity for active exertion in the practice of it.

The first dissection known to have been made in America, was, according to Dr. Dunglison, in the year 1750; and the first course of Surgical and Anatomical lectures were delivered about two years afterwards, in Newport, Rhode Island, by Dr. Wm. Hunter. In 1765, Drs. Shippen and Morgan delivered a course of lectures, the former, on Anatomy and Surgery, and the latter, on the Theory and Practice of Medicine, under the auspices of the College of Philadelphia—and thus commenced the first medical school in America, now known as the "Old School" of Philadelphia, or the Medical Department of the University of Pennsylvania. Three years after this, in 1768, a Professor of Materia Medica and Medical Botany was appointed, in the person of Dr. Kuhn, and, at the same time, in imitation of the European organization of Medical Schools,

a Professor of Clinical Medicine was also appointed. It appears, however, that this latter Professor did not lecture, from two years after his appointment, until his death, and that the chair of Clinical Medicine remained vacant until twenty years afterwards, when, in 1791, on the union of the Medical College of Philadelphia with the rival school that had sprung up in that city, in connection with the University of Pennsylvania, and the consequent amalgamation of the two faculties, the Professorship of Clinical Medicine, united with that of the Institutes of Medicine, was conferred on the celebrated Dr. Rush.

This apparent failure of the attempt to teach clinical medicine, at that time, is easily to be accounted for, by those who compare the medical wants of a new and thinly settled country with those of an old and densely populated one; or by one who is able to draw a comparison between the requirements of medical knowledge in the young and vigorous west at the present time, and those which are called into action in the crowded cities and swarming population of the east.

The pupils who flock to the medical colleges in the new country, go to be indoctrinated into the fundamental principles of medical knowledge.—The groaning hospital of the crowded city has but few attractions for them, nor can it yield them much information or experience that will be of great advantage to them in their subsequent practice. For were they even prepared, by previous elementary study, to commence the clinical study of medicine, the character of the diseases presented to them in the crowded hospital of the densely populous city, and the treatment that is found necessary in those melancholy receptacles, differ so much from those which they will be called on to manage, and the course they will find successful, that it is a doubtful question whether, on the whole, the time spent by the western student, in the acquisition of such knowledge, in the existing state of the country, and in the period allotted to instruction in the medical schools, is not injudiciously employed.

Hence, most probably, was it, that in the just commen-

cing school of Philadelphia, the lectures on Clinical Medicine, in the hospital of that city, by the able Professor, Dr. Bond, seem to have naturally ceased, until the lapse of twenty years had rendered the eastern country more dense in its population, the cities more crowded, and the proportion of those students who intended to practice in the thickly peopled regions, great enough to make those lectures valuable to a considerable portion of the classes.

The time will undoubtedly come, when the western country becomes crowded in its population, that hospital medical practice will be of great advantage to the western student; but at the present, except for surgical diseases and surgical operations, the best of hospitals is the office of a practicing physician, and the best clinical observation and instruction is that which the preceptor is able to give to his pupil among his own patients.

In 1769, four years after the commencement of the lectures in the Philadelphia College of Medicine, a professorship of Chemistry was created, and the duties of the chair were performed by Dr. Rush, who began his brilliant career, as a teacher of Medicine, by his lectures on this interesting branch of medical science. The faculty was then said to be completely organized, and doubtless the organization was good, compared with the wants of the country, yet it was an organization which has required and received much improvement to adapt it to the more extended requirements of the present day; for we find that until as late as 1805, when Dr. Physic was appointed to the chair of Surgery,—an appointment which has cast more honors on the donors than on the receiver, Anatomy, Surgery and Midwifery were all taught by one professor; and it was not until 1810, when Dr. James was appointed to teach the latter branch of medicine, that it was finally divided from Anatomy. It is a remarkable fact, by the way, that from that time, 1810, the classes of the old school of Philadelphia have varied very little from the annual average of 398 students.

The extensive and varied country of the west, gaining daily in population and improvement, at length began to

feel the necessity for medical institutions of her own, by which her students might be saved the long journey over the mountains, and in which the principles of the science of medicine and a knowledge of the peculiarities of the diseases of the country might be acquired. Accordingly "The Medical Department of Transylvania University* was organized in the autumn of 1817. Its first Faculty consisted of five professors, Drs. Dudley, Richardson, Blythe, Overton and Drake. Its first class numbered twenty, and at the end of the session about twenty years ago, the degree of Doctor of Medicine was conferred on one candidate, Mr. J. L. McCullough, a native of Lexington. 'This was the first medical commencement ever held west of the mountains.'" Since that time, this institution has numbered, in all to the end of the last session, 3820 pupils and has sent out 1058 graduates of medicine.

Other medical schools have also sprung up in the west. The number of medical institutions, in operation in the west in the past year, 1837, was six, the number of students attending the lectures in them, was 569 and the number of graduates 126. While the whole number of medical schools in America at the present time is twenty-eight or thirty and the number of medical students in the United States, is probably about 3000. The improvement and the increase of the means of medical instruction, it must be evident, have advanced with the general improvement of the country, and the present race of students of medicine are favored with facilities, for the prosecution of their studies, which were unknown to their less fortunate predecessors, or which would have cost them a visit to a distant continent to obtain.

Apart from these facilities, afforded by the proximity and abundance of the means of medical instruction, other favorable circumstances, brought about by the onward progress of our science and of general improvement, materially aid the modern student.

Medicine is approaching, daily more and more the

*Dr. Drake's Journal, vol. 9, 614.

character of an exact science. Observation, experiment and logical induction have already supplied it, of late years, with an immense amount of positively certain information; to which the laborious industry and rigorous impartiality of a number of arduous investigators are daily adding. The mists of hypothesis and all the thick darkness of ancient scholastic dogmas are yielding to the bland light of truth. Minds, like those of Lord Bacon, of John Hunter, Louis, Andral and Berzelius, have improved the mode of reasoning in science, furnished it with a multitude of facts on which to reason, and opened to the world new pages of the great book of nature. Uncertain speculation gives way to strictly logical induction; and the dicta of authority yield to the irresistible force of facts gained by patient observation. An anecdote, related in the necrological notice of the late Dr. Physic, by Dr. Horner, will serve to illustrate the mode in which this change in medical studies and in medical science has been brought about. When Dr. Physic commenced his medical studies, "the book of the highest reputation at that period, and which was handed to him with the strongest commendations by Dr. Kuhn," (his preceptor,) "was Cullen's first *Lines of the Practice of Physic*. In the sincerity of his character, he thought within himself: This book being so much esteemed, and containing so many profound and well-ascertained points of knowledge, I cannot do better than learn the whole of it accurately. He therefore went to work and committed it to memory, presenting thereby a solitary example in the history of medicine of this task accomplished; and which appears the more wonderful to us at the present day, from the comparative disuse into which these volumes have fallen."

"When twenty years of age, in 1788, his father took him to London, and succeeded in placing him under the direction of Mr. Jno. Hunter, the greatest surgeon of the day, and now looked upon as the first medical man that the British empire has produced: his posthumous reputation having gone vastly beyond any that he ever had when

alive. Mr. Hunter was no student of the writings of others, but a profound interrogator of nature; he had little or no respect for any other revelations of science, than those made with the dissecting-knife, and under his own observation. The affair being settled that young Mr. Physic was to study under him, the elder Mr. Physic said, "Well, sir, I presume some books will be required for my son, I will thank you to mention them that I may get them." "Here, sir," says Mr. Hunter, "follow me; I will shew you the books your son has to study." Mr. Hunter led the way from his study to his dissecting-room, and entering it pointed to several dead bodies. "These are the books," says he, "which your son will learn under my direction; the others are fit for very little." The impression made on the mind of Dr. Physic was durable; he never forgot the remark, especially after committing to memory Cullen's First Lines, as he had done but a short time before in Philadelphia."

John Hunter in his admiration of nature and his contempt for authority, professed to despise books, and there was much in the works of his day deserving of his contempt, but his sweeping condemnation was doubtless too indiscriminate even for his own times, and would not at all apply at present; for even his own labours tended to improve greatly the character of books on medicine, and the researches of a host of other industrious and capable observers of nature have given ample material for the formation of really valuable books; the impartial records of science and the imperishable archives of knowledge.

The result of the independent spirit and the labours of such men as Jno. Hunter has been, as we have intimated, that the character of the science of medicine has been changed in these latter times; and the duties of the student have changed with the character of the science. The task which he encounters is more pleasant to the rational mind, and more improving to the better faculties, than that of his predecessors. The magnitude of the undertaking is by no means lessened, but its nature is more adapted to satisfy the longings of the enquiring mind that delights

in knowledge. Instead of the laborious perusal, "by the midnight lamp," and the lengthened contemplation, of puzzling dogmatical quiddities, the nice balancing of conflicting authorities, the wild vagaries of hypothesis and all the abstruse and vain learning, which the student of former times was obliged to encounter and to master, the task which we approach, is to learn facts, which recommend themselves by their simplicity and beauty; facts which may be observed by our senses, which are approved by our judgment, and, consequently, which are easily to be grasped and retained. In short, the great book of nature is opened before us, to which the mind of man is adapted and congenial;—the study of which is a positive pleasure, not a toil, and against which all human authority "will weigh but as dust in the balance."

But while these facilities and improvements should be the cause of congratulation among us, there is one attendant consideration to which we must not fail to give due weight. In proportion to the advantages we enjoy in the means of instruction will be the requisition made of us by society, and the weight of the responsibility we shall take upon us.

We are taught in holy writ, that he who had ten talents committed to his charge was required to render an account of the interest of the ten talents, and he who received but five obtained equal honor for giving a proportionate increase;—but he who having even but one talent failed to employ it profitably, and hid it in the ground, deserved and received punishment and disgrace. In like manner we, who, compared with many of our predecessors, may be said to enjoy the possessions of ten talents when but barely five were committed to their care, will miserably disappoint ourselves if we suppose that no more will be required of us than was of our industrious and honorable fathers in the profession.

The success of their labors was not, and could not, be as great as that which will be demanded of those who follow them; yet, if we consider the paucity of their means and their more limited information, we shall be obliged to admit that they have faithfully performed their part and with

exertion and perseverance, have employed their imperfect means to the utmost. The physicians of former times were not to be censured, because, in the unfinished state of their knowledge, many diseases were irremediable in their hands which it would be highly disgraceful for the modern practitioner to fail to master.—More is expected in proportion to the perfection of our science and our means.—With the imperfect system of medicine possessed by the physicians of ancient Rome, for example, censure could not be attached to them, although the average length of human life in that city was only thirty years; but with the increased information of the medical men, and the greater extension of the boundaries of science, in England, they, or the legislators of the country, might be justly blamed, were the average limit of existence to fall much below forty-five years. Our predecessors have faithfully employed the five talents committed to their charge, and their posterity now enjoys the increase. Their labors have been arduous, and their industry indefatigable: the difficulties which they encountered lessened the profits of their exertions, and the removal of them increases that of ours. But let us not flatter ourselves that it will at all lessen the necessity on our part for equal exertion, equal industry and perseverance. The removal of difficulties has been accomplished by the increase of the means of improvement;—the road to learning has, indeed, been greatly improved, but the day's journey is lengthened: a higher standard of perfection has been raised before us, and excellence cannot be attained without the manly determination, and the performance of it, to put forth our utmost strength in the lengthened race, and to persevere laboriously to the end.

The task which the modern student has to encounter, although more pleasant and congenial to the well developed intellect than that of the study of medicine in former times, is yet one of such magnitude that few are able fully to master it in all its extent; although every industrious student, by keeping a high standard before his eyes, can attain an elevation far beyond the highest capabilities of the greatest medical worthy of preceding ages. Were it, in-

deed, possible for some of those whose names are prominent in medical history, to revisit the world in the nineteenth century, their astonishment could only be equalled by their pleasure, at the advancement of our science.

The study of medicine in its widest sense, is the study of nature;—the study of nature in all its extent and minutiae, if it were possible; for all created objects have affinities with man, and act upon him in some manner, or throw some light on his structure, faculties, or functions. But the human mind is too limited to take in the whole great history and is obliged to confine its study of minutiae within contracted limits, and to content itself with only *general* views of the greater part of the immense field of knowledge.

The parts of the study of nature, to which the physician confines his minute investigations, are those connected with the history of the structure and functions of the human body, and the powers and objects which have a marked action upon it for good or for evil. The structure of the body of man in all its interesting minutiae, or special anatomy, demands his first attention, and a knowledge of the functions of the organs which anatomy discloses, or of physiology, is not of minor importance. These, together, make him acquainted with the structure and functions of man in health, but this is but a small part of the labour before him. He is now only prepared to comprehend the changes in structure and functions which cause, or are occasioned by disease, the study of which that of pathology. Then the causes, symptoms and mode of palliating or curing the innumerable diseases “which flesh is heir to”—the theory and practice of surgery and medicine, in all their various branches, occupy his attention, and open his eyes to the necessity of the knowledge of medical agents and their modes of action, comprehended under the heads of *Materia Medica* and *Therapeutics*;—the knowledge of the action of the ordinary agents, constituting the study of *Hygiene*; and lastly, not least, the necessity is evident for the minute study, under the auspices of *Chemistry*, of the

nature of all the powers and substances which are employed in medicine, which enter into the composition of the human body; or which, in the economy or motions of the external world, act on man in health or in disease.

Even this task, circumscribed as it must appear when compared with the whole range of natural science, is one of considerable magnitude: one, indeed, which from the present state of society and the consequent organization of the schools of medicine, cannot be fully mastered during the longest collegiate course in our own country, in England or in Edinburg. In some of the schools of continental Europe the case is somewhat different. As a brief notice of these different schools will make apparent.

In the organization and government of her schools of medicine, America, guided in part by her own peculiar wants, has copied her mother England, who, in her veneration for ancient and long established customs, often forgets what is due to young improvement. To graduate in the College of Surgeons of London, the candidate is required, after three years preliminary study, to attend two winter courses of lectures, of seven months, and undergo a final examination. In Edinburg, the student is required to study four years, to attend the lectures of seven professors, and undergo an examination. In France, where they are less trammelled by veneration for ancient things, and where revolution has lately broken up old attachments, the term of study is also four years; but there are twenty-one professors who lecture in the great Ecole de Medecine, and the candidate is required to undergo several rigid public examinations during the course of his studies. In Germany, at Vienna, the number of courses of lectures delivered is eighteen regular and three extraordinary;—the student is obliged to attend sixteen; the duration of his elementary studies is five years, of ten months each, during which he is publicly examined every half year. In Prussia, the requisitions for graduation in medicine are yet greater. There, education of every kind is conducted with all the regularity and strictness of the evolutions of an army, according to a fixed system, the *beau ideal* of the despotic ruler. The Berlin University has sixteen ordinary Medi-

cal Professors, ten extraordinary, and fifteen private teachers. The legal period of study is four years, and none are admitted to the first medical examinations who are not possessed of a complete education certificate; in other words, a learned preliminary education. The candidates for the degree in medicine undergo five academical examinations, and are then, although graduated, not permitted to practice until they have passed a certain official or state examination.

In our highly-favored country every thing is rapidly progressive, and our institutions are moulded by the character of the country and of the people. The onward march of emigration into new regions; the constant springing up of new towns and the rapid increase of population, in all parts of it, call rather for the energetic application of what we already know, than for the patient waiting for greater fullness of knowledge. The harvest is plenteous, but the laborers are few.

This state of things, however, is rapidly changing. Not many years ago a majority of candidates for medical practice were content if they were able to attend one course of lectures in a Medical College. Now, neither they, nor the community, are satisfied unless they obtain the degree of Doctor of Medicine; and it is justly required of them, by society, that they lay well and firmly the foundations of knowledge, at the Medical School, before they attempt, by private study and experience, to raise the superstructure. And even now, more and more of those who study medicine with a view to practice in the thickly settled parts of the country, find themselves called on, in self-defence, and in honor, not only to attend the two courses requisite to graduation, but to study with the advantages afforded by the medical institutions, three, and even four years.

The necessity for increasing the extent and the period of medical education, in the Colleges, with the increasing density and improvement of society, has been felt and expressed by several eminent men in the older parts of our country. It has been proposed, both in Philadelphia and at the Medical Convention in Columbus, Ohio, to lengthen

the term of the lectures to five months, and increase the number of courses and the prerequisites for graduation in proportion; and the change may take place, when, a few years hence, the increased density and improvement of society will permit and demand it. But, as we have seen, the means of instruction and the standard of perfection, in medicine, have been already enhanced. The science has been rendered more practically instructive. The time usually given, not many years back, to vain hypothesis and dogmatical speculation, is now employed in the teaching and the acquisition of important truths. The spectres and the windmills of humoralism, of solidism and other hypothetical refinements, no longer engross the time of the teacher, perplex the student, nor invite the ready lance of the chivalrous in medical disputations;—they sleep in the obscurity which has always shrouded them and concealed from the superficial their inconsistencies; while Nature, whose immense stores of truths, even the great mind of Newton could only scan, is now the great subject of study.

Thus, although in silence and without pompous announcement, or enactment, a great improvement has been effected, in medical education, in our country and in the West. Nor could a stronger evidence of it be given than in the change of character, standing and importance that the useful branch of medicine, Chemistry has undergone within a short period. Not five years have passed, since, from the professional chair in our venerable institution, was heard the sneer and the rude jest applied to check the advancement of this science in the domain of medical philosophy;—and not fifty years have elapsed since Chemistry, although then beautiful and useful in many of its facts and applications, was successfully repelled in its vain attempt, with its then imperfect knowledge, to invade the territory of vital phenomena: but since that time, like the science of medicine itself, it has undergone a change which has raised it, in importance, to a degree almost commensurate with the aspirations of its most sanguine promoters. Its high wrought theories and its splendid specu-

lations have indeed passed away, but within these fifty years, its facts have been multiplied beyond the largest expectation, and its philosophy has been tempered down almost to the calmness and certainty of mathematical deduction.

It may not be improper to give, in this connection, some evidences of the value of this branch of science to a good elementary medical education.

It is the province of Chemistry, to ascertain and teach the ultimate properties of every substance on the earth, and the nature of the laws and forces which act upon them to cause combination or decomposition. Such knowledge is evidently of great value to the physician. It makes him acquainted with the composition of the human body, of the fluids which circulate in it, and of the food which nourishes it. The nature of the process of digestion is only to be seen by the light of this knowledge; and respiration, and the phenomena of many of the secretions and excretions, were never fully comprehended until the investigations of Chemistry furnished the main facts in their history. On the other hand, to this science are we indebted for the knowledge of the nature and composition of all the various medicinal agents of the healing art; as well as for that of the laws governing the all-pervading imponderable principles, electricity, caloric and light, which by their action on the particles of ponderable matter, play a master-part in the great drama of nature, and exert a powerful influence on animated existence.

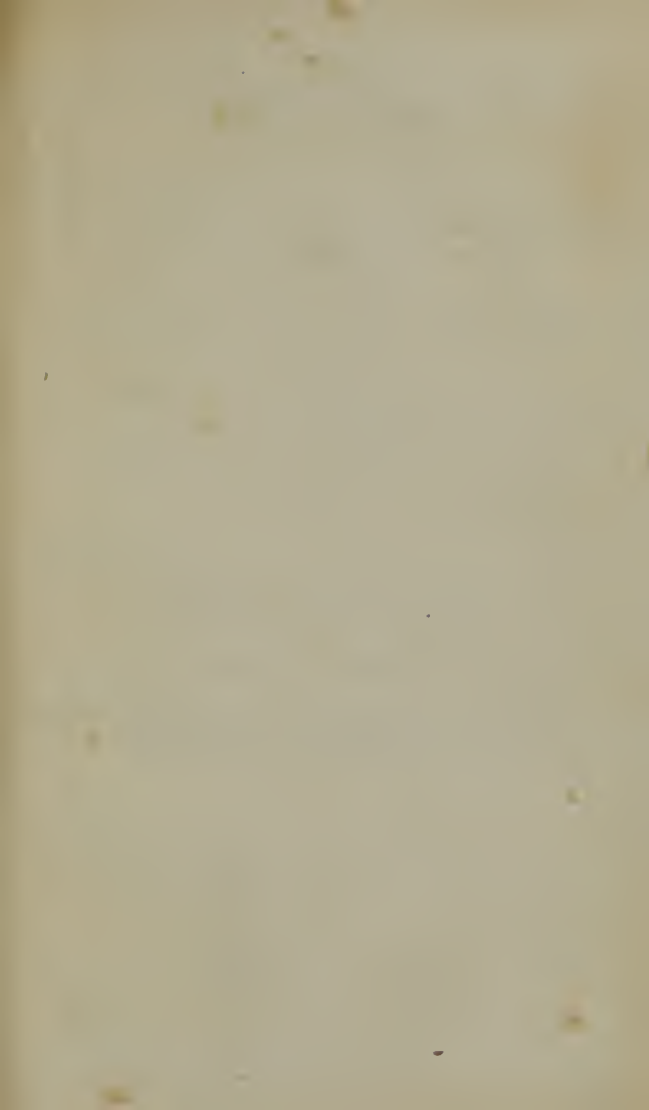
The task before you, therefore, of laying deeply and firmly the elementary foundations of medical philosophy, is greater than that which was required of our predecessors; although more pleasing and congenial to the enquiring mind, and more satisfactory in its rewards. The greater advancement of society and the extension of the boundaries of knowledge demands more from you than was expected from the pioneers in medicine, but society is prepared to award to you a proportionate remuneration of honor and profit,

Those who have gone before us cannot be excelled in devotion to the cause of knowledge, and unceasing laborious application to its acquisition and promulgation. Their toil may, indeed, be compared to that of the hardy first settlers of our country, of whom the stern necessities of their lot demanded the most laborious and unceasing exertion; and the change which their labors have brought about in the science of medicine, is like that improvement in the aspect of our extended home which has followed the axe and the plough of the simple pioneers of the forest.

Few, indeed, of the present day, consume so much of the midnight oil, rob sleep of so many of its appropriated hours, or tax their faculties with such long-continued labors, as did those, our fathers in medicine; who have left behind them, in their multiplied, thick and wide-paged folios, and in the recorded results of their investigations, enduring monuments of self-devotion to the shrine of knowledge. Such men have felled the moral forest before us, and carried the smooth road over the most rugged domain of science. Such men have been the real benefactors of their race; and posterity, to the latest age of time, will award to them the meed of imperishable honor.

These worthies, if ye would indeed be distinguished physicians, must ye emulate;—not as did the aping followers of the ancient philosopher, who, to look like their master, drank a decoction to make their faces pale like his;—but in your ardor in the pursuit of knowledge—your patience in the long and trying labor of its acquisition—your self-devotion in its advancement, and your philanthropy in its application and promulgation.

Do this, and you become worthy of the wide and beautiful country which acknowledges you as lords of the soil. Do this, and the rapid strides of physical improvement, in its passage over our beloved continent, will be equalled, step by step, by the advancement of knowledge in the noble and god-like art of healing.





THOUGHTS
ON
MEDICAL EDUCATION
IN AMERICA.
AN INTRODUCTORY LECTURE,
DELIVERED IN
THE CHAPEL OF MORRISON COLLEGE,
TO THE
MEDICAL STUDENTS
OF
Transylvania University,
On the 11th November, 1838.

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Department of Transylvania University.*

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